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(54) Improvements in or relating to  
viewdata systems

(57) In a viewdata or videotex system the information displayed on a menu page is automatically cycled through a series of information options comprising menus of page numbers and their descriptions, with each option remaining visible for a sufficient time to enable the information displayed to be sensibly viewed. Thus a single menu page can be used to display an option 30 comprising page numbers 31 and descriptions 32 and an option 33 comprising page numbers 34 and descriptions 35 alternately, so that a greater quantity of information can be presented to the user by means of a single page.

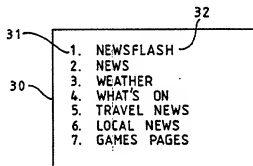


FIG 2

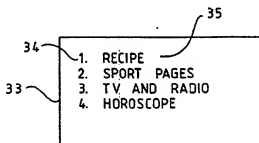
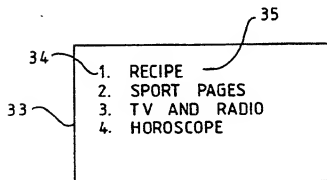
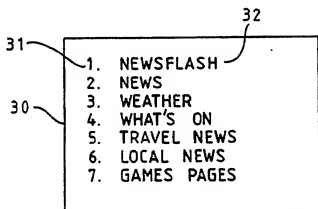
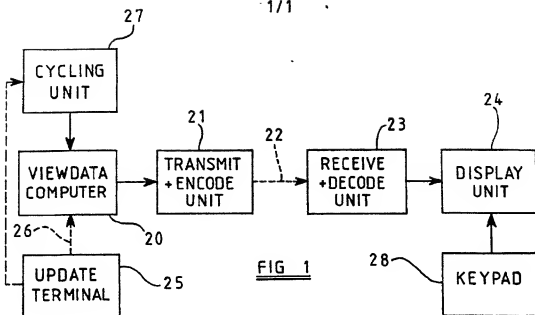


FIG 3

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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## SPECIFICATION

## Improvements in or relating to viewdata systems

This invention relates to viewdata systems.

- 5 Viewdata systems are systems in which information from a computer is transmitted down a telephone line and displayed on a video display unit, generally a modified television set. In the United Kingdom one such system, a public viewdata
- 10 systems operated by British Telecom, is known as Prestel (Registered Trade Mark). This system enables a user to access frames or pages of information on the Prestel database by way of a telephone line and to display these pages one at a time on a display screen by actuating buttons on a keypad. Information to be accessed on the system is supplied to the database by Information Providers who may have the facility to automatically update their own pages of information on the system by means of a special terminal and a telephone line.

- 20 Access by the user to pages on the system may be achieved, where the required page number is known, by direct entry of the page number on the keypad or, where the page number is not known or the user has made no decision as to what information he wishes to access, by accessing various static menu pages which include brief descriptions of pages which may be accessed together with direct routes to those pages. However
- 30 such menu access to information is cumbersome, more particularly since only a limited number of options can be given on any one menu page. In the case of the Prestel system, the number of direct routes and thus options available on each menu page is a maximum of ten. In this case, if it is required to present the user with more than this limited number of options, it is necessary either to employ double-digit choices via an intermediate page, although this, in turn, is severely limited by the physical descriptive capacity of the page, or to provide one or more continuation pages in addition to the original menu page and to invite the user to select the next continuation page by actuation of a button on the keypad. In practice this can mean that
- 45 options provided on continuation pages of the menu are selected by users much less frequently than options on the first menu page, and this can be severely detrimental to the interests of Information Providers who happen to have descriptions of their
- 50 pages allocated to continuation menu pages.

It is an object of the invention to provide a system in which a user may more easily gain access to pages or other information by way of menu pages.

- According to the invention there is provided a
- 55 viewdata or videotex system comprising memory means for storing a page of information, update means for updating the stored page of information, transmission means for transmitting the stored page of information in encoded form over a telephone line, receiving means for receiving the transmitted page in encoded form and for decoding the page for display on a display unit, and refresh means for automatically changing the information on the page provided for display on updating of the
- 60 stored page of information by the update means,

wherein the update means incorporates cycling means for automatically cycling the information on the stored page through a range of information options, whereby the information on the page

70 provided for display by the receiving means automatically changes during display to display said range of information options on a cyclic basis.

- The invention also provides a transmission facility for a viewdata or videotex system, which facility comprises memory means for storing a page of information update means for updating the stored page of information, transmission means for transmitting the stored page of information in encoded form over a telephone line to enable the
- 80 transmitted page to be decoded and displayed by appropriate receiving means, and refresh means for automatically changing the information on the page provided for display on updating of the stored page of information by the update means, wherein the update means incorporates cycling means for automatically cycling the information on the stored page through a range of information options, whereby the information on the page provided for display by the receiving means automatically
- 90 changes during display so as to display said range of information options on a cyclic basis.

- It will be appreciated that, by appropriate design of the information options presented to the cycling means, the information displayed can be changed
- 95 cyclically with a view to displaying to the user over a period of time a much greater quantity of information than could be displayed by a single static page. For example, each information option may comprise a menu of page descriptions and route codes by means of which the pages may be
- 100 accessed, so that different menus of page descriptions can be displayed on a cyclic basis, so that a very wide selection of page descriptions and their route codes may be presented to the user over a period of time. Since the range of information options is cycled continuously, no particular preference is given to any one menu of page descriptions and route codes. In other words the range of information options displayed forms a perpetual carousel.

- In one embodiment of the invention each information option lists a menu of route codes which is common to all the information options and, associated with each route code, a respective page
- 115 description which differs for the same route code in each information option, and selection means are provided for selecting a page for display in response to selection by the user of one of the route codes, the page which is selected in response to a
- 120 particular route code differing according to the particular option displayed on the menu page at the time the selection is made.

- In a further development of the invention each information option incorporates an information
- 125 layout which differs from the information layout of the other information options only in respect of information in a portion of the display, whereby the information on the page provided for display changes cyclically during display only in that
- 130 portion of the display.

In order that the invention may be more fully understood, reference will now be made, by way of example, to the accompanying drawing, in which:—

Figure 1 shows a block diagram of a viewdata system in accordance with the invention;

Figure 2 shows a first information option on a menu page displayed on such a system; and

Figure 3 shows a second information option on the same menu page displayed on such a system.

Referring to Figure 1 the system comprises a viewdata computer 20 containing a database comprising a large number of pages of information and a transmit and encode unit 21 which may be used to transmit a page of information in encoded form over a telephone line 22 so that the page may be received and decoded by means of a receive and decode unit 23 and subsequently displayed on a display unit 24. A particular page on the viewdata computer 20 may be directly updated by means of an updated terminal 25, optionally through the intermediary of a telephone line 26. A cycling unit 27, which may either be a separate general purpose computer or an integral part of the viewdata computer 20 itself, is connected so as to cyclically update a page on the viewdata computer 20 such that the information on the page automatically cycles through a range of information options as it is viewed on the display unit 24 by a user. The user has the option of selecting pages of information to be displayed by operation of a numeric keypad 28.

The cycling unit 27 may be used to cyclically display a series of information options comprising menu lists to information available for display on other pages in the system. Figures 2 and 3 illustrate two such information options to be cyclically displayed on a menu page. It should be noted that the number of information options which may be cyclically displayed is limited only by the capacity of the cycling unit 27.

Referring to Figure 2 the first menu information option 30 comprises a series of seven route numbers 31, which are respectively 1, 2, 3, 4, 5, 6 and 7, and a respective desc, 6 and 7, and a respective description 32 alongside each route number. In the option illustrated in Figure 3 there happen only to be four choices so that only the first four route numbers need be used, although it will be appreciated that more route numbers in the series would be used where further options were provided. It will further be appreciated that different descriptions are provided for the same route number in each option.

In operation the two menu options of Figure 2 and Figure 3 are displayed cyclically at a rate sufficient to enable the user to sensibly view the information displayed. The user may select an option corresponding to a displayed description by operating a button on the keypad corresponding to the route number alongside that description. An appropriate page corresponding to the selected description will thereby be displayed on the display unit. However, the page which is selected in response to a particular route number being entered on the keypad will differ according to the description displayed on the page alongside that route number

at the time that the selection is made. Thus, for example, if route 1 is selected when the first information option is displayed, the "Newsflash" page will be displayed, whereas, if route 1 is selected when the second information option is displayed, the "Recipe" page will be displayed.

In a variation the cycling unit operates so as to cyclically change only the information in a portion of the display, for example so as to change the description associated with only one of the route numbers or so as to change an item of information, such as an advertisement, displayed in a panel on the page.

In another variant the cycling unit may be used to change the order of the selections shown on a page, the route numbers preferably staying the same whilst the descriptions change their positions.

#### CLAIMS

1. A viewdata or videotex system comprising memory means for storing a page of information, update means for updating the stored page of information, transmitting means for transmitting the stored page of information in encoded form over a telephone line, receiving means for receiving the transmitted page in encoded forms and for decoding the page for display on a display unit, and refresh means for automatically changing the information on the page provided for display on updating of the stored page of information by the update means, wherein the update means incorporates cycling means for automatically cycling the information on the stored page through a range of information options, whereby the information on the page provided for display by the receiving means automatically changes during display to display said range of information options on a cyclic basis.

2. A viewdata or videotex system according to claim 1, wherein each information option comprises a menu of page descriptions and route codes by means of which the pages may be accessed.

3. A viewdata or videotex system according to claim 2, wherein each information option lists a menu of route codes which is common to all the information options and, associated with each route code, a respective page description which differs for the same route code in each information option, and selection means are provided for selecting a page for display in response to selection by the user of one of the route codes, the page which is selected in response to a particular route code differing according to the particular option displayed on the menu page at the time the selection is made.

4. A viewdata or videotex system according to any preceding claim, wherein each information option incorporates an information layout which differs from the information layout of the other information options only in respect of information in a portion of the display, whereby the information on the page provided for display changes cyclically during display only in that portion of the display.

5. A viewdata or videotex system according to any preceding claim, wherein each information option comprises a respective menu of page descriptions,

the same page descriptions being listed in each menu but the page descriptions being displayed in a different order in each menu.

- 5 6. A transmission facility for a viewdata or videotex system, which facility comprises memory means for storing a page of information, update means for updating the stored page of information, transmission means for transmitting the stored page of information in encoded form over a  
10 telephone line to enable the transmitted page to be decoded and displayed by appropriate receiving means, and refresh means for automatically changing the information on the page provided for display on updating of the stored page of  
15 information by the update means, wherein the update means incorporates cycling means for automatically cycling the information on the stored page through a range of information options, whereby the information on the page provided for  
20 display by the receiving means automatically changes during display so as to display said range of information options on a cyclic basis.
7. A transmission facility according to claim 6, wherein each information option comprises a menu  
25 of page descriptions and route codes by means of which the page may be accessed.
8. A transmission facility according to claim 7,

wherein each information option lists a menu of route codes which is common to all the information  
30 options and, associated with each route code, a respective page description which differs for the same route code in each information option.

9. A transmission facility according to claim 6, 7 or  
35 8, wherein each information option incorporates an information layout which differs from the information layout of the other information options only in respect of information in a portion of the display, whereby the information on the page provided for display changes cyclically during  
40 display only in that portion of the display.
10. A transmission facility according to any one of claims 6 to 9, wherein each information option comprises a respective menu of page descriptions, the same page descriptions being listed in each  
45 menu but the page descriptions being displayed in a different order in each menu.
11. A viewdata or videotex system substantially as hereinbefore described with reference to the accompanying drawing.
- 50 12. A transmission facility for a viewdata or videotex system substantially as hereinbefore described with reference to the accompanying drawing.